

BIOGRAPHICAL SKETCH

Charles Wolff received his PhD at the University of Illinois in Physics with a minor in Astronomy. He immediately abandoned his thesis topic (superconductivity) and headed for the space program. John Lindsay recruited Wolff when Lindsay was creating a Solar Physics Branch by gathering people and hoping they would gradually become solar physicists. Wolff has been at Goddard ever since, working primarily on solar problems.

Although he has worked on the solar wind and numerical modeling of convection, the bulk of his effort has been on solar oscillation modes with long periods—g-modes and r-modes. He was perhaps the first to take seriously the possibility of large numbers of solar g-modes in spite of the fact that the standard solar model predicted they could not be excited. The rotation rates of those modes have the possibility of imposing long term periodicities (~months and ~years) on convection, solar activity, and solar irradiance. Over the years, Wolff has published various bits of observational evidence for this regular behavior.

For a fuller view, one can scan the titles of some of his publications:

More Recent:

Wolff, C. L., 1995: Oscillation-convection coupling: Cause of supergranulation? *Astrophys. J.*, **443**, 423.

Wolff, C. L., 1996: Convection: Periodic due to r-modes. *Astrophys. J. Lett.*, **459**, L103.

Wolff, C. L., 1997: Large convective events and their aftermath in a rotating star. *Astrophys. J.*, **486**, 1058.

Wolff, C. L., 1998: Linear r-Mode Oscillations in a Differentially Rotating Star. *Astrophys. J.*, **502**, 961.

Wolff, C. L., 2000: Linear r-Modes below the Sun's Convective Envelope. *Astrophys. J.*, **531**, 591.

Mayr, H. G., Wolff, C. L., & Hartle, R. E., 2001. Wave Driven Nonlinear Flow Oscillator for the 22 year Solar Cycle. *Geophys. Res. Lett.*, **28**, 463.

Wolff, C. L., 2002: Rotational Sequences of Global Oscillations Inside the Sun. *Astrophys. J.*, **580**, L181.

Wolff, C. L. & Mayr, H. G., 2004: The Sun's Reversing Flows and Heat Spike as Caused by g-Modes. *Astrophys. J.*, **606**, L163.

Mayr, H. G., Mempel, J. G., & Wolff, C. L., 2005: Wave-driven Equatorial Annual Oscillation Induced and Modulated by the Solar Cycle. *Geophys. Res. Lett.*, in press.

Selected Others:

Wolff, C. L., 1972: Free oscillations of the Sun & their possible stimulation by solar flares. *Astrophys. J.*, **176**, 833.

Wolff, C. L., 1974: Distinctive patterns on the surface of slowly rotating stars whose oscillations are nonlinearly coupled. *Astrophys. J.*, **193**, 721.

Wolff, C. L., 1983: The rotational spectrum of g-modes in the Sun. *Astrophys. J.*, **264**, 667.

Wolff, C. L., 1984: Solar irradiance changes caused by g-modes and large-scale convection. *Solar Physics*, **93**, 1.

Wolff, C. L., and W. R. Hoegy, 1989: Periodic solar EUV flux monitored near Venus. *Solar Physics*, **123**, 7.

Wolff, C. L., 1992: Intermittent solar periodicities. *Solar Physics*, **142**, 187.